

## Returns to Management of Greenhouse-Soilless-Grown Bell Peppers in Florida

Elio Jovicich<sup>1</sup>, John J. VanSickle<sup>2</sup>, Daniel J. Cantliffe<sup>1</sup>

<sup>1</sup>Horticultural Sciences, University of Florida, 1241 Fifield Hall, Gainesville, FL, 32611,

<sup>2</sup>Food Resource and Economics, University of Florida, 1197 McCarty Hall, Gainesville, FL, 32611

U.S. consumption of mature colored bell peppers has been increasing over the past decade. That increased consumption has been satisfied with increased imports and increased U.S. production. In Florida, peppers are mostly harvested at the immature green stage of development because open field environmental conditions negatively affect fruit quality and fruit yields of mature colored fruits. Greenhouse-grown peppers of red, orange, or yellow colors were imported during 1993-2002 from The Netherlands, Israel, and Spain at average year round fruit market prices of \$4.80 per kg, with higher prices in the Nov-May period. By contrast, local and imported field-grown green peppers averaged only \$0.91 per kg. With high market prices and a suitable environment for growing colored peppers under inexpensive greenhouse structures (<\$50 per m<sup>2</sup>), up to 10 ha with soilless greenhouse-grown peppers were in production in Florida in the year 2002. Greenhouse area is predicted to expand in the near future, in part as a consequence of the greater demand of specialty vegetable crops, loss of methyl bromide, and the increase of urban sprawl and price of arable land. We estimated production costs and returns to management of greenhouse grown peppers assuming the use of current technology applied by Florida growers. Assumptions were based on a pepper crop grown in a high-roof polyethylene-covered greenhouse with a total area of 0.78 ha with soilless-grown, non-pruned plants at 3 plants/m<sup>2</sup> population density, and with occasional use of fuel for heating during winter and spring (Northcentral FL region). The crop was transplanted in August and fruits harvested from November through May. Costs of production per 5-kg box ranged from \$26.23 to \$9.62 based on a range of possible marketable fruit yields of 6 to 20 kg·m<sup>-2</sup>, respectively. The average prices (in \$ per kg) for transactions of colored peppers at the Miami market during the harvesting months were Nov: \$4.58, Dec: \$5.28, Jan: \$5.63, Feb: \$4.75, Mar: \$5.30, Apr: \$6.00, and May: \$5.50. With an estimated transaction cost of 15% of the market prices, breakeven prices per 5-kg box for marketable fruit yields of 6, 10, and 15 kg·m<sup>-2</sup> were \$30.17, \$19.25, and \$13.79, respectively. With currently achievable fruit yields of 10 and 15 kg·m<sup>-2</sup>, production costs were \$28.42 and \$30.55 per m<sup>2</sup>; and with Nov-May average market prices, the returns to management were \$9.75 and \$26.72 per m<sup>2</sup>. Local production of greenhouse-grown peppers could represent a viable vegetable production alternative for Florida growers. However, fruit yields should be greater than 7.13 kg·m<sup>-2</sup> in order to generate positive returns to management.